CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

Order No. 92-036

Site Cleanup Requirements for:

SAFETY-KLEEN CORPORATION and
JOHN BERTOLOTTI

For the Property Located at:

3461 Woodward Avenue
Santa Clara, Santa Clara County

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. SITE DESCRIPTION Safety-Kleen Corporation (Safety-Kleen) operated a solvent storage and transfer facility at 3461 Woodward Avenue (Site), property that was leased from John Bertolotti, the property owner. The Site comprises about one-third acre located in Santa Clara one-half mile west of the Guadalupe River (see Figure 1).

2. REGULATORY STATUS Safety-Kleen is a discharger because of their occupancy of the Site during a time when discharges occurred. John Bertolotti is a discharger because of current ownership of the Site and will be responsible for compliance in the event that Safety-Kleen fails to comply with the requirements of this Order.

3. BACKGROUND Safety-Kleen stored clean and spent solvent in two 15,000 gallon underground steel tanks. Storage of solvents occurred between 1977 and 1984, when operations at the site ceased. The tanks and associated piping was removed in April, 1984.

   Clean solvent consisted mainly of mineral spirits (petroleum naptha) with less than 1 percent light aromatic hydrocarbons, toluene, perchloroethene (PCE), 1,1,1-trichloroethane (TCA), trichloroethene (TCE), and methylene chloride. The clean solvent was pumped through some 60 feet of piping to fill drums for distribution.

Drummed waste (spent solvent, oil and grease, and solids) were separated with the liquid flowing to one of the underground tanks via underground piping. The separated sludge was stored in a warehouse onsite in 16 gallon drums.

4. SOIL AND GROUNDWATER POLLUTION Soil and groundwater have been polluted at the site. Subsurface investigations were begun in 1984, and have included 31 soil borings, 12 groundwater monitoring wells, aquifer pump testing, and soil vent tests. Likely sources include spillage of clean solvent into soil surrounding the clean solvent tank fill pipe, spillage of separated spent solvent liquid into soil surrounding the spent solvent tank, leakage of clean and spent solvent into soil along the underground piping, and possibly leakage from the underground tanks.

Pollutants in soil have included mainly mineral spirits at up to 5500 parts per million (ppm; see Figure 2), methylene chloride at about 8 pm, chloroform at up to 610 ppm, 1,2-dichlorobenzene (DCB) at up to 860 ppm and 1,3-dichlorobenzene at up to 970 ppm. Pollution was present in soil down to the water table, which currently ranges from about 9 to 13 feet below ground across the site.

Spent solvent and mineral spirits were detected as a separate phase floating on groundwater in soil borings as early as April 1984. The maximum thickness measured in monitoring wells 3SMW and 8SMW on August 15, 1988, is 1.66 feet.

Dissolved constituents in groundwater include mainly mineral spirits and VOCs. The VOCs detected in monitoring wells since March, 1988, include methylene chloride (up to 7.5 ppb), 1,1-dichloroethane (36 ppb), 1,2-dichloroethene (DCE; 81 ppb), 1,1,1-trichloroethane (TCA; 2.4 ppb), trichloroethene (790 ppb), perchloroethene (10 ppb), vinyl chloride (13 ppb), and 1,2-dichloroethane (15 ppb). Concentrations of generally less than 10 ppb were detected occasionally of chlorobenzene, 1,2-/1,3-/1,4-DCB, 1,1-dichloroethene, 1,1,2-TCA, chloroform and 1,2-dichloropropane.

5. SITE REMEDIATION Interim remedial actions for soil and groundwater pollution have been taken by Safety-Kleen. Underground tanks were removed in 1984, and in March, 1986, 675 cubic yards of soil and 41,000 gallons of groundwater were removed from the tank excavation pit.

Remediation systems were installed in August, 1988, for groundwater extraction (RW-1) and treatment, and soil vapor extraction (13 vents) and treatment. Extracted groundwater has been treated in an air stripper prior to discharge to

the storm drain under NPDES Permit CA0029416. Extracted soil vapor has been treated with granular activated carbon prior to discharge to the atmosphere.

In late 1990 the systems were modified by initiating manual recovery of separate-phase mineral spirits began, and changing operation of the groundwater and soil vapor extraction systems to a pulsed mode. No separate-phase mineral spirits have been recovered from any well since April, 1990; there continues to be a "sheen" present in wells 3SMW and 8SMW.

6. OFFSITE SOURCE Concerns have been raised by the discharger regarding an offsite source of TCE. Groundwater monitoring data indicate a plume of TCE and related breakdown products is encroaching onsite from an unknown upgradient source. By letter dated November 18, 1991, Regional Board staff approved Safety-Kleen's request to cease operation of both groundwater and soil vapor extraction systems.

   TCE concentrations in upgradient well 5SMW have consistently been in the range of 200 to 900 ppb, two or more orders of magnitude higher than in any other onsite monitoring well. Increasing concentrations of TCE have been detected in extraction well RW-1 since pumping began in 1988. Related TCE-degradation products 1,1-DCA, 1,2-DCE and vinyl chloride have also been detected only in upgradient wells 1SMW, 2SMW, 3SMW, and 5SMW, and in well 10SMW.

7. SITE CLOSURE Operation of groundwater and soil vapor extraction systems at this site has achieved the 1 ppm total VOC cleanup criteria for soil, as required by Order 89-161. This was verified through soil sampling. While operation of the extraction systems has significantly reduced concentrations of site pollutants to near drinking water standards, continued operation of the groundwater extraction system appears to be accelerating movement of the offsite plume onsite into areas where groundwater and soil have been remediated.

   Because of encroachment of the offsite TCE plume, and the levels of cleanup achieved for soil and groundwater, staff recommends that this site be considered for closure. A regional investigation by Board staff has begun to identify the source of the encroaching TCE plume. Any TCE source identified will be addressed with a separate Board action.

8. CLOSURE PLAN A proposed plan for site closure has been submitted by Safety-Kleen, and accepted by Board staff. The plan, "Workplan, Treatment System

Dismantling and Site Closure, Former Safety-Kleen Facility, 3461 Woodward Avenue, Santa Clara, California" (Closure Plan), December 20, 1991, includes elements to cease all operation of the extraction systems, remove or seal off portions that may serve as conduits to further pollution migration, and implementation of a long-term monitoring program to verify the effectiveness of the remedial actions taken at the site.

9. SCOPE OF THIS ORDER This Order contains tasks for site closure and long-term monitoring. Site closure will require cessation of all extraction and treatment, dismantling of specific elements of the extraction, treatment and monitoring systems, and initiation of a modified monitoring program. These tasks are necessary to minimize encroachment of an offsite plume into areas that have been remediated, to prevent future access of surface pollution to subsurface soil and groundwater, and to monitor effectiveness of the remedial actions taken at the site.

10. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. the Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwater.

11. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility are:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply

12. The dischargers have caused or permitted, and threaten to cause or permit, waste to be discharged or deposited where it is, or probably will be, discharged to waters of the State, and create, or threaten to create, a condition of pollution or nuisance.

13. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.

14. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge, and for closure and monitoring of the site, and has provided them with the opportunity for a public hearing and an

opportunity to submit their written views and recommendations.

15. The Board, in a public meeting, heard and considered all comments pertaining to the discharge and site closure.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger, their agents, successors and assigns, shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of site pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

4. The storage, handling, treatment or disposal of soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Code.

B. SPECIFICATIONS

1. Within 60 days of the Executive Officer's determination and actual notice to John Bertolotti that Safety-Kleen Corporation has failed to comply with this Order, John Bertolotti, as landowner, shall comply with this Order.

2. Safety-Kleen shall conduct all activities necessary to monitor and maintain the effectiveness of groundwater and soil remedial actions taken. Should monitoring results show evidence of site-related pollutant migration, additional characterization of hydrogeologic conditions and pollutant extent may be required. If further migration of site-related pollutants has, or may occur, additional remediation may be required.

3. The cleanup goal for source-area soils is 1 ppm for total VOCs. This has been demonstrated to have been achieved through confirmation soil sampling, documented in the report "Evaluation of Remedial Actions and Proposed Final Cleanup Objectives, Former Safety-Kleen Corporation Facility, Santa Clara,

California", dated November, 1990. Long-term monitoring as specified in this Order shall be conducted to verify the effectiveness of soil cleanup actions taken at this site.

4. Final cleanup levels for polluted groundwater related to site activities shall not be greater than DTSC drinking water Action Level (AL) or EPA Maximum Contaminant Level (MCL), whichever is more stringent. Where ALs or MCLs are not established, levels shall be in accordance with the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California", be protective of human health and the environment, and approved by the Board. These levels have not been achieved at the site for 1,1-DCA, TCE, 1,1-DCE, and vinyl chloride, and may not be achievable without causing further migration of upgradient groundwater pollution.

5. If further site-related soil or groundwater pollutant migration does occur, pursuant to Specification B.1., the discharger must demonstrate that further cleanup is not feasible or desirable.

6. If further discharge of treated groundwater to waters of the State will occur on a regular basis, or in high volumes, as part of sampling, testing or future remedial action, the discharger shall submit a completed NPDES application for reissuance well in advance of expiration of the current Permit No. CA0029416.

C. PROVISIONS

1. Safety-Kleen shall comply with this Order in accordance with the following time schedule and tasks.

   a. TASK: SUMMARY OF HISTORICAL GROUNDWATER MONITORING DATA

   Submit a technical report acceptable to the Executive Officer summarizing all groundwater monitoring data collected, including the time period before groundwater extraction began. The summary shall be in table form, and include all chemicals detected and actual detection values for nondetects, and shall be organized as a listing of chronologic samples per well. This same table shall be updated for each monitoring sampling event, and be included in each monitoring report.

   DUE DATE: April 30, 1992

b. TASK: SITE CLOSURE IMPLEMENTATION REPORT

Submit a technical report acceptable to the Executive Officer documenting all activities related to site closure. These activities shall be pursuant to the Closure Plan, dated December 20, 1991, and shall include at least: cessation of groundwater and soil vapor extraction, dismantling of the soil vent system, dismantling of the groundwater treatment system, proper abandonment of extraction well RW-1, removal of the air stripper treatment unit from the site, and implementation of the proposed long-term monitoring program.

DUE DATE: July 1, 1992

c. TASK: SUBMIT FIVE YEAR STATUS REPORT

Submit a technical report acceptable to the Executive Officer containing results of any additional investigative work completed, an evaluation of the effectiveness of installed final cleanup measures, additional recommended measures to achieve final cleanup levels, if necessary, a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup levels, the tasks and time schedule necessary to implement any additional final cleanup measures, and recommended measures for reducing Board oversight. If safe drinking water levels have not been achieved through remedial actions taken, this report shall also contain an evaluation addressing whether it is technically feasible to do so.

DUE DATE: October 31, 1994

2. The submittal of technical reports evaluating remedial measures shall consider the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40CFR part 300); Section 25356.1(c) of the California Health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California".

3. If the discharger is delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the discharger shall promptly notify the Executive Officer.

4. The discharger shall submit to the Regional Board acceptable reports on compliance with the requirements of this Order. Where more than one report required under this Order is due concurrently, they may be combined, but shall be well-labeled and readily identified as to the requirement(s) being addressed.

ON A QUARTERLY BASIS, the discharger will submit reports on compliance with this Order to include results of groundwater monitoring. The reports shall be submitted on the last day of the month following each calendar quarter. The first quarterly report shall be due on July 31, 1992, and shall cover the period of April through June, 1992. Each quarterly compliance report will include:

1) Summary of work completed during the reporting period and work which will be completed during the next reporting period. Any obstacles which may threaten compliance with this Order and what steps will be taken to overcome these obstacles.

2) Results of quarterly water quality sampling analyses according to the schedule of sampling in the approved Site Closure Workplan of December 20, 1992. Groundwater monitoring pursuant to the Workplan schedule began in November, 1991 (Year 1, 1st quarter).

LONG TERM SAMPLING - SAFETY KLEEN, 3461 WOODWARD AVENUE			
QUARTER	YEAR 1	YEAR 2	YEAR 3
1ST	SMW-2,3,6,8	No Sampling	No Sampling
2ND	SMW-2,3,6,8	SMW-2,3,6,8	No Sampling
3RD	SMW-2,3,6,8	No Sampling	No Sampling
4TH	ALL WELLS	ALL WELLS	ALL WELLS

Groundwater sampling and analyses results shall be submitted in a chronologic summary table acceptable to the Executive Officer. The table shall include all historic groundwater monitoring data, updated each quarter with current monitoring data. The table shall list all chemicals detected, show all concentrations detected including detection values for "non detect" analyses, and shall list all samples in chronologic order for each well. Signed lab analysis records shall also be included.

3) Groundwater elevation contour map updated with the current water level data. Any other maps, cross-sections or diagrams necessary to

illustrate compliance with this Order.

ON AN ANNUAL BASIS, technical reports on compliance with all requirements of this Order shall be submitted. The first report will be due on January 31, 1993, and will cover activities for 1992. Annual reports will be due on January 31 of each subsequent year. The reports shall include at a minimum progress on site closure, groundwater monitoring results, and compliance with requirements of this Order.

5. The discharger shall file a report on any changes in Site occupancy and ownership associated with the facility described in this Order.

6. If any hazardous substance is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge to this Regional Board, at (510)464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800)852-7550 during non-business hours. A written report shall be filed with the Regional Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control, and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

7. Order 89-161 is hereby rescinded with adoption of this Order.

8. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, Executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on April 15, 1992.

Steven R. Ritchie
Executive Officer